

The world of 'Skyro' and 'Skoo'

It's in Duxbury,
home of a dreamer
named Cudmore

By Daniel Golden
Special to The Globe

DUXBURY — His house stands alone about halfway out on Duxbury Beach, a seven-mile peninsula of sand dunes, wild robushes and tide-toppled telephone poles. Its atmosphere recalls some forgotten South Sea island where English settlers evolved a hybrid culture all their own.

Outside the house are small signs of the unorthodox. Hanging from a tree is a teardrop-shaped feeder that always turns downwind so that snow never blankets its opening. Nearby, propped against a shed, is a sailboat that skims the ocean on hydrofoil wings.

Indoors, the house is jammed with the unusual. On one wall, abortive kites hover above a training bicycle with a rear wheel that resembles a watermelon. On the floor wobbles a huge plastic egg in which a child can rock safely.

The beach dwelling embodies the playful mind of its owner, Patrick John Cudmore, one of America's dwindling band of 2000 fulltime independent inventors. In an age when most inventors are employed by government or industry, the 40-year-old Cudmore chases his dreams alone.

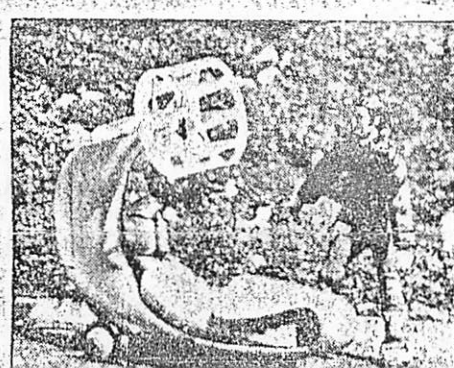
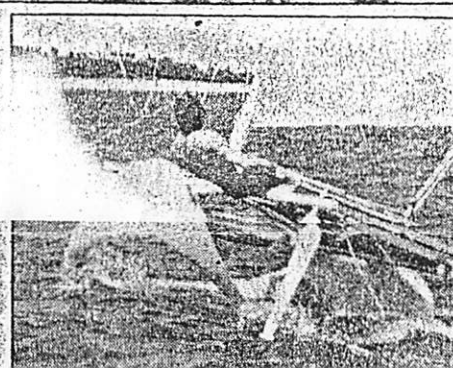
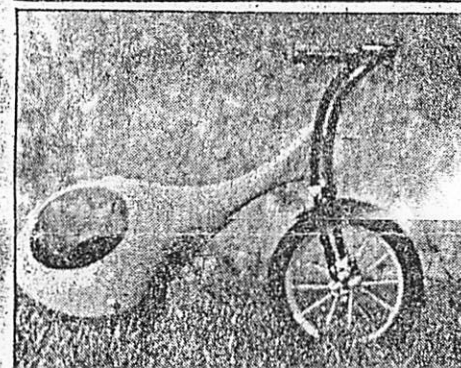
He not only designs inventions, but he also often builds and tests them in the ocean and winds buffeting Duxbury Beach. More visionary than businessman, he nevertheless must sell manufacturers on his ideas. Without laboratory or think tank, he may spend years perfecting one invention — scraping by with an optimist's casual eye on success.

Since he abandoned a more orthodox career ten years ago as a designer for Cambridge consulting firms, Cudmore has invented unique toys and machines — often resembling abstract sculpture — that use the forces of sunlight, air and water. He believes they are the precursors of flying cars, windmills with mid-air rotary



Patrick John Cudmore smiles out from a paraphernalia-filled room at top left. Some of his inventions, clockwise from top right: a teardrop-shaped bird feeder that always turns downwind so that snow never blankets its opening; a flying car; a hydrofoil sailboat that lifts out of the water even in low winds; and a training cycle that Cudmore calls a "brike."

GLOBE PHOTOS BY JOE RUNCIE



wings and other science-fictional innovations that someday will ease traffic jams and help to fill energy needs.

Cudmore has obtained eight patents, but only two inventions, both flops, have been marketed. Bad breaks have stymied him, friends say, along with his reluctance to alter his creations or surrender rights to them. His five foremost inventions:

- The "Skyro," a plastic rotary wing which the inventor says represents a new method of powered flight. (Rockwell International plans a prototype of Cudmore's flying jeep, which would provide the first test of his rotary wing's applications.) The toy, which Milton Bradley, Inc., marketed, can, with practice, be thrown 200 feet. It was meant to compete with the frisbee — but it never did.

- The "Bug-eye," which magnifies an insect six times, and illuminates it with a special type of glass. This insect-viewer is intended as a child's microscope, and Milton Bradley also produced it. It has had limited sales.

- The "Skoo," a roller-skate with the maneuverability of an ice skate. Manufacturing arrangements misfired, but Cudmore still has hopes for them.

- A simplified rear-view mirror, which Cudmore says eliminates blind spots. He invented it for an automobile company, and he says American cars may use it by 1985.

- A hydrofoil sailboat that lifts out of the water even in low winds. This is prob-

ably his best chance for a major success. A book recognizing promising projects published his plan this year for the hydrofoil, which he predicts will sail as fast as a motorboat.

"Today's cathedrals," says Cudmore, are now being built for the outer space program. It's our job to bring that technology down to earth and make it helpful to everybody.

"I think there will be more change in the next 30 years than in the whole history of mankind."

Friends say that Cudmore's intuitive sense for natural forces and lack of preconceptions reflect an extraordinarily fertile mind. They call him a Renaissance man, with a curiosity as wide-ranging as Leonardo's. "That part of his mind that should strike down crazy ideas is sluggish enough that they find a niche," one says fondly.

But, perhaps because Cudmore is largely self-taught in mathematics, aerodynamics and other fields related to his work, friends say that his reach may exceed his grasp.

For example, Synestructics, Inc., of California commissioned Cudmore, at a time when the inventor was desperately poor, to build a kite that would change shape with the wind. But neither that kite nor an alternate offered by Cudmore flew as well as the company wished.

"He's probably a brilliant guy," says

company president Peter Pearce. "But, like many inventors, he was so intoxicated by his idea that he never verified the principle behind it, which turned out not to be well-founded. He understands his inventions less than he would have you believe."

Cudmore comes from Pierre, South Dakota, of pioneer stock. During the late 19th century gold rush to the Black Hills, his maternal grandfather, Hormidas Marion, started the first restaurant in Ft. Pierre, which is west of the Missouri River. An island in the river was named after him.

Cudmore's father was a shoe salesman and entrepreneur who invented the field boot — now worn by engineers and construction workers — and died when Cudmore was five. His strong-minded mother, who died in 1978, ran a motel and a ranch. A Sioux Indian woman who had survived the Wounded Knee massacre lived with the family as his nanny, and taught Cudmore the rudiments of the Sioux language. He says that he absorbed from her the Indian belief that nature is sacred, a belief that has influenced his energy-conserving inventions.

Cudmore briefly attended a seminary, which he explains as a search for a role model to replace his father. He was a cadet at Air Force Academy for a year, which he found stifling, and graduated from Catho-

lic University in Washington, D.C. After receiving a master's degree in architecture at Harvard, he was a designer for Cambridge Seven, Earl Flansberg, and ABT associates.

Raised by one parent himself, Cudmore retained custody of his two sons after a divorce from his first wife in 1969. He then decided to quit ABT and MIT, where he was a doctoral candidate, and become an inventor, which enabled him to supervise his children more easily. He remarried in 1976. His wife, Lorraine, is a biologist and writer.

In 1971, Cudmore left ABT to set up shop in a north Cambridge church building, which was later demolished as a fire hazard. He and his employees whittled models of the "Cudmore rotary wing" from soap bottles, and the "Skyro" was born. He moved to Duxbury in 1974, and to the beach house in 1978.

Cudmore obtained a bank loan and sold his share of the family ranch in South Dakota to finance the shop, which moved in 1972 to the loft of a paper plant. He also borrowed from friends. "There were very bleak times, when the amount of money he had mattered down to the last penny," says a friend.

Disappointments have continued to be the story of Cudmore's life, but, as he says, the future is the only test of an inventor.